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ISSUE FEATURES

Severe weather in Canada

B.C. cave rescue response

An interview with the Lead Minister for Search and Rescue

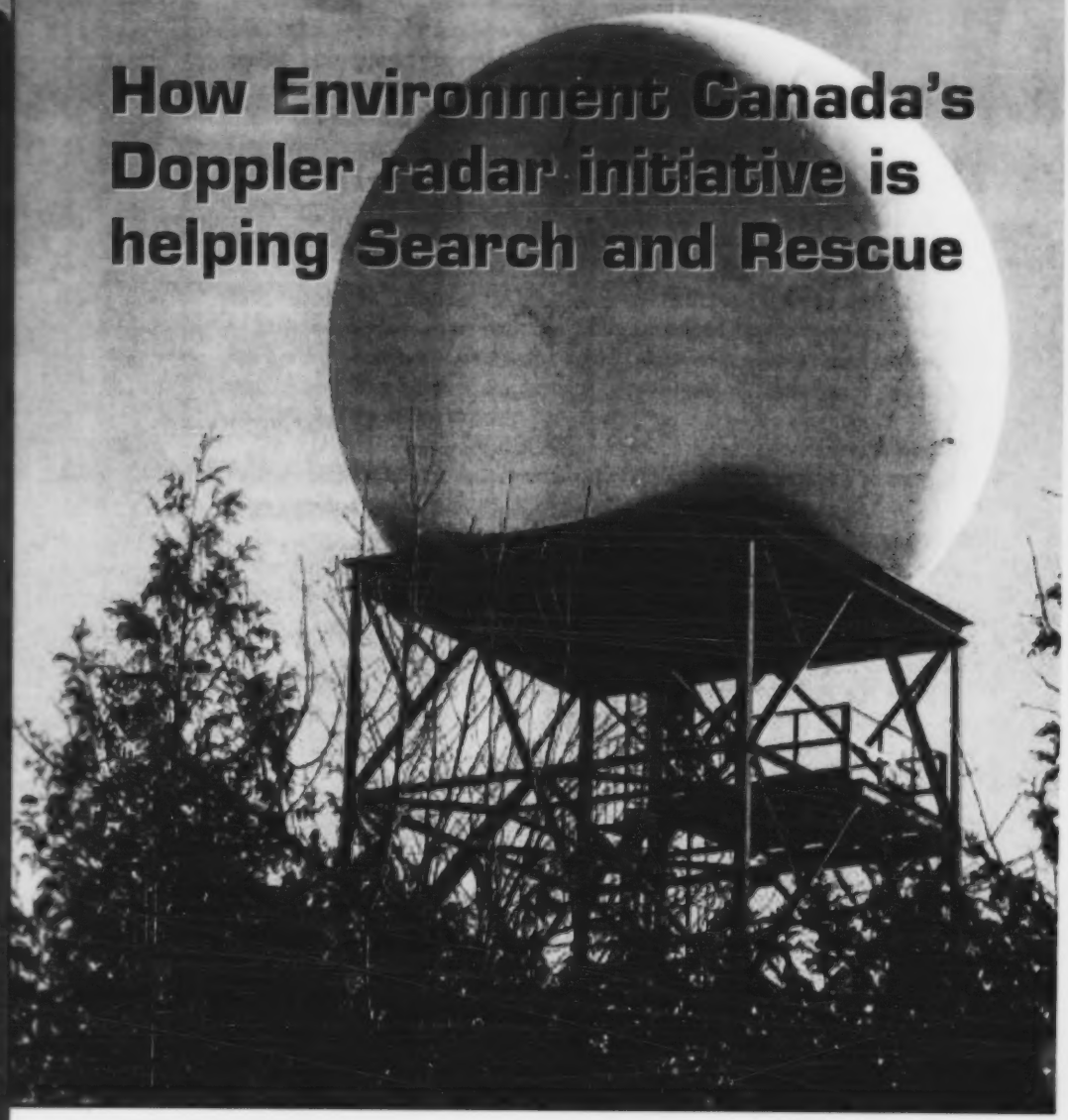
Risks and benefits of cell phones

SAR SCENE

Winter/Spring 2003 Vol. 13, #1

The Canadian Search and Rescue Magazine

How Environment Canada's Doppler radar initiative is helping Search and Rescue



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SARSCENE

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ALTER EGO

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BOOK REVIEW

Shipwreck Treasures – Disaster and Discovery on Canada's East Coast by Roger Marsters

Reviewed by Jack Gallagher, International Marine SAR Consultant

This book is a diverse look at the world of east coast shipping over the last five centuries.

It presents brief but interesting encounters with many well known and several lesser-known ship wrecks. It spans accounts from whaling in the mid-1500s to the break-up of the M/V Flare in 1998.

The author's passion for maritime history comes through in the narrative as he develops the scene and historical context for each event. This same passion is evident in the description of wrecks that have been replaced or preserved for the viewing and edification of future generations.

Each chapter tells a story about a particular event or underwater find. Every story is illustrated with captivating pictures, which draw even a casual observer into the book. The pictures include maps, photographs and paintings of ships, artifacts and the people involved.

The stories flow easily although the use of kilometres is distracting when used to describe distances at sea. As a mariner, I found myself converting to nautical miles to better understand the scenario that was being described.

Shipwreck Treasures is a good coffee-table book that people will pick up to look at the pictures. Once picked up it is difficult to put down without reading at least one of the stories. The good story telling and great pictures make for a very enjoyable read.

Jack Gallagher is a former Canadian Coast Guard commanding officer and manager with extensive experience in marine incident response and Receiver of Wrecks responsibilities. ■

Hail to the Unsung Hero – 2003 SAR Awards

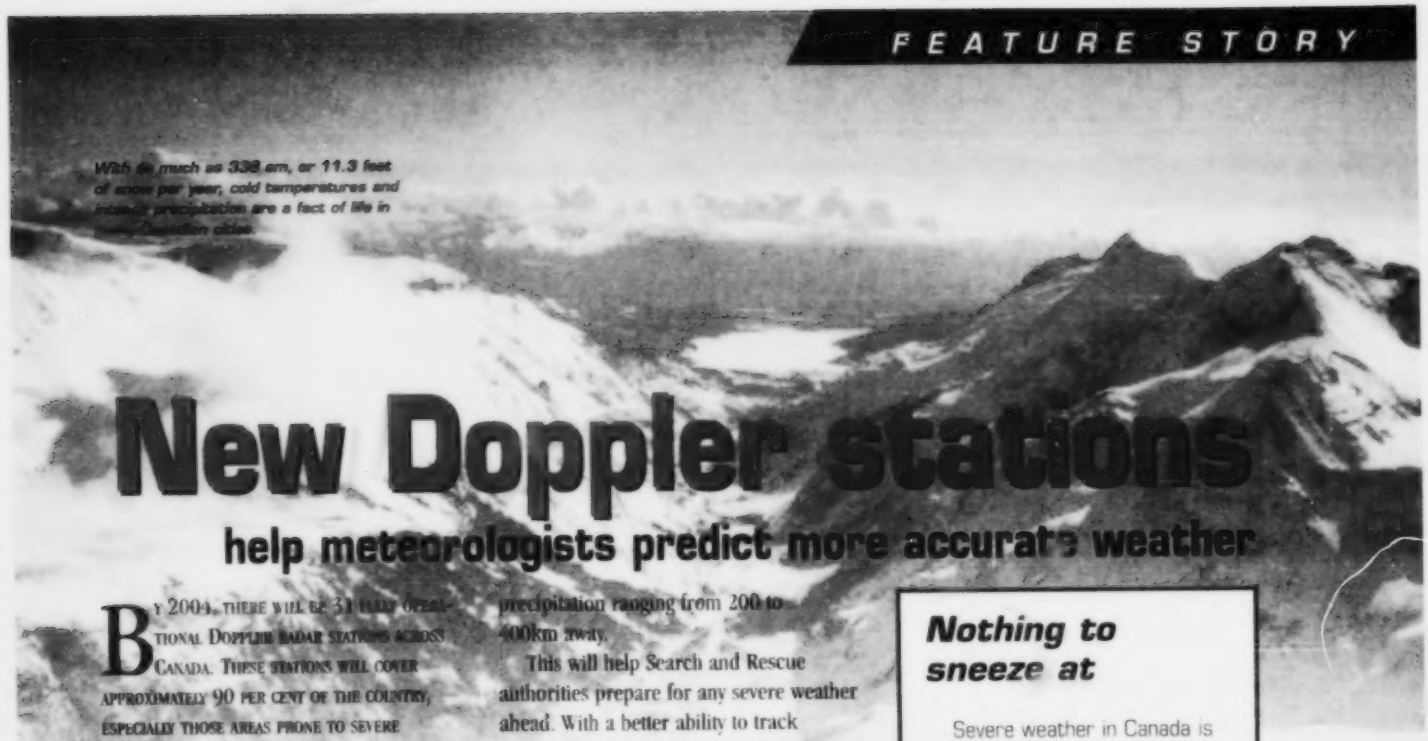
Nominations are due by May 31, 2003.

The NSS Awards Program was introduced in 1995 to acknowledge outstanding work done by search and rescue providers and organizations, and to raise awareness of search and rescue efforts across Canada.

The Outstanding SAR Achievement Award recognizes exceptional contribution to Canadian SAR by an individual or organization. The Certificates of Achievement recognize individuals or groups who have made significant contributions to SAR.

Nomination information and forms are available at www.nss.gc.ca. Click on **Awards** in the top menu. Or call 1-800-727-9414.

The award and certificates will be presented at SARSCENE 2003 in Kingston, Ontario on October 18, 2003.



With as much as 338 cm, or 11.3 feet of snow per year, cold temperatures and intense precipitation are a fact of life in many Canadian cities.

New Doppler stations

help meteorologists predict more accurate weather

BY 2004, THERE WILL BE 31 FULLY OPERATIONAL DOPPLER RADAR STATIONS ACROSS CANADA. THESE STATIONS WILL COVER APPROXIMATELY 90 PER CENT OF THE COUNTRY, ESPECIALLY THOSE AREAS PRONE TO SEVERE WEATHER. DOPPLER RADAR MEASURES THE INTENSITY OF PRECIPITATION, AS WELL AS ITS SPEED AND DIRECTION WITHIN STORMS. THIS HELPS METEOROLOGISTS DETECT CONDITIONS THAT COULD LEAD TO A TORNADO.

Severe weather is a fact of life in North America – whether it be the 5 feet of snow dumped on us in January, the downpour of rain we see every spring, or even the tornado warning. No matter what season, we can expect a gift from Mother Nature.

But severe weather won't come as a surprise thanks to improving technology and new Doppler radar stations across Canada, part of Environment Canada's $34.9 million plan.

Originally developed just before WW II, radar was used to detect and locate hostile aircraft at long distances, and today, weather radar can locate and follow precipitation ranging from 200 to 400km away.

This will help Search and Rescue authorities prepare for any severe weather ahead. With a better ability to track storms and their severity, new Doppler technology could also help prevent incidents from occurring because people across Canada will be better informed about possible dangerous weather developments in their area.

According to Environment Canada's website on the Doppler radar initiative, "the advanced weather radar will provide meteorologists with the data needed to more quickly and precisely detect and predict severe weather, such as heavy rainfall, winter storms, thunderstorms, hail and tornadoes."

"The goal is to provide sufficient warning to the public to be able to take action to ensure their safety and security and implement emergency plans to minimize damage and economic loss," says Environment Canada.

continued on page 2

Nothing to sneeze at

Severe weather in Canada is nothing to sneeze at. Each year, poor weather conditions cause an average of 220 fatal car accidents and more than 11,500 severe injuries, says Environment Canada.

For example, the July 1987 Edmonton tornado killed 27 people, injured 253 others and had an economic impact of approximately $330 million. The December 1996 snowstorm in Vancouver and Victoria had an economic impact of $200 million, and the hailstorms that hit Calgary and Winnipeg in July 1996 caused $300 million in property damage.

BROADER RANGE OF SERVICES

Environment Canada announced in March its plan to invest $75 million over five years in the Meteorological Service of Canada (MSC). With this investment, the MSC hopes to improve its accuracy and timeliness of day-to-day forecasts, longer-term forecasts and prediction of extreme weather across Canada.

With as much as 338 cm, or 11.3 feet of snow per year, cold temperatures and intense precipitation are a fact of life in many Canadian cities.

New Doppler stations

help meteorologists predict more accurate weather

By 2004, there will be 31 fully operational Doppler radar stations across Canada. These stations will cover approximately 90 per cent of the country, especially those areas prone to severe weather. Doppler radar measures the intensity of precipitation, as well as its speed and direction within storms. This helps meteorologists detect conditions that could lead to a tornado.

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Weatheradio service further expands in Nunavut

Northern Challenge

Environment Canada's Meteorological Service of Canada (MSC), in collaboration with the Nunavut government, applied for funding from the New SAR Initiatives Fund (NIF) over two years ago to install three Weatheradios in the Nunavut territory. The partners were concerned that weather information and warnings were difficult to obtain in many communities after regular radio broadcast hours.

The NIF provided funding for the initial purchase of Weatheradio equipment plus the installation costs at three new locations in Nunavut. The Nunavut government funds the majority of the costs associated with maintenance and ongoing operation. Weatheradio has been available in the Cape Dorset, Rankin Inlet and Arviat regions of Nunavut since June 2002.

One challenge faced by Environment Canada is the various dialects found throughout the region. Environment Canada is working with the Nunavut government to see what can be done to find an acceptable Inuktitut weather terminology that will be understood regardless of local dialects. A pilot project broadcasting current weather conditions in Inuktitut is planned for later this year.

In another NIF initiative, the MSC, in partnership with the NWT government, will install Weatheradio capacity on Great Slave Lake in 2005.

Weatheradio Facts

Weatheradio is a broadcast service located on the VHF-FM radio band. There are 168 transmitters located across Canada, operating on seven different frequencies, providing weather information 24 hours a day, seven days a week.

The automated system broadcasts the latest weather observations, public and marine forecasts and warnings for specific areas of the country. According to Yvonne Bilan-Wallace, NIF project manager for the FM weather radio in Nunavut and Public Program Manager and Meteorologist with Prairie Aviation and Arctic Weather Centre, the information is updated within minutes of receiving an observation or sending out a forecast.

continued from page 1

Each radar has a circular coverage of approximately 500 sq. kilometres, but even more information will be available thanks to the Canada-U.S. agreement to share radar information to maintain a continuous flow of weather data across the border. The radar information is shared between adjacent radar stations in each country. For example, the Atlantic region's American weather information comes from the United States National Weather Service Doppler radars in Maine.

Since Doppler radar can predict severe weather sooner than before, meteorologists will be able to issue severe weather warnings at an earlier stage of a storm's development. When warnings are issued, they are broadcast on Environment Canada's Weatheradio service, and are provided to both television and radio stations.

The public will now have more warning and time to protect themselves and their property, and SAR providers will be able to be more prepared for incidents in severe weather. ■

Austrian scientist J.C. Doppler hypothesized that the frequency of sound waves from a moving source would increase as they approached an observer and decrease as they moved away.

Courtesy of Environment Canada.

Regular FM or AM radios are unable to tune into the frequency used by the service, so people must buy the special receiver in order to access reports. The receivers cost between $50 and $100, depending on the features you want. Some have a conventional radio feature or even a walkie-talkie type of communication device.

The receiver is not intended to replace local radio and T.V. broadcasts, but is designed to complement them and enhance the information the public receives about possible weather situations. Weatheradio receivers come in different sizes with a variety of functions and can be purchased at retailers who specialize in electronics. Some models even chime, beep or flash just prior to receiving an announcement of a severe weather warning. Unlike T.V. or conventional radio, the Weatheradio doesn't have to be on to sound an alarm for a weather watch or warning. ■

According to Canadian Avalanche Centre statistics, the typical avalanche victim is male and in his twenties. Although most avalanches occur between January and March, there is still a danger in the warmer months from May to October.

Human behaviour & avalanches

The economic cost of avalanche accidents exceeds $50 million annually, despite avalanche worker training and safety programs. In human costs, statistics from the Canadian Avalanche Association (CAA) say that more than 100 people each year will be caught in an avalanche. So far this season, 25 people have died in avalanches in Canada. Statistics indicate that for each person killed, five or more people will be caught in an avalanche, but will survive.

Several years ago the CAA recognized the need to revamp its old Level 2 training program for technical training of avalanche workers, ski hill operators and highway workers who control avalanches threatening highways. Now the CAA is taking a more comprehensive approach to avalanche training in Canada, by including best risk management practices and linking those best practices to human behaviour and decision making, because there is a growing awareness that technical training alone is not enough to prevent accidents.

Mountain Equipment Co-op provided $50,000 over two years towards the Canadian Avalanche Association's public avalanche safety programs.

The Avalanche Decision-making And Professionals Training (ADAPT) program was implemented this season to provide state of the art training for avalanche workers in Canada.

This new project, funded by the New SAR Initiatives Fund (NIF) and sponsored by Parks Canada and Heritage Canada, was a two-year project to develop this new training program for avalanche professionals.

Canadian Avalanche Association Training schools are the only formal provider for avalanche safety training for avalanche industry workers in Canada. And according to the CAA, Level 2 training is necessary for mountain guides, ski guides and avalanche control operators in ski areas and highways.

Understanding risks

The ADAPT program focuses on risk management and decision making processes for avalanche workers who are out in avalanche terrain every day through the winter doing their work. With a better understanding of how humans perceive potential risks and their personal and team decision making processes, the CAA believes it is helping to change attitudes toward risk taking, and is achieving improved safety for workers, and for the public that avalanche workers are responsible to protect.

continued on page 5

Number of *hurricanes and tropical storms* increase: *What does this mean for SAR?*

Higher waves occur in shallower water. Once a wave is formed, it can travel thousands of kilometres without losing a lot of energy.

Over the last 50 years, an average of more than four tropical storms or hurricanes have posed a threat to Canada or its territorial waters each year. Over the last eight years, this average has increased to nearly six per year. Tropical storms and hurricanes cause storm surges, floods, high waves, damaging winds, heavy rainfalls and erosion, according to Environment Canada's Canadian Hurricane Centre (CHC).

In the past decade, there has been a dramatic increase in the number of hurricanes and tropical storms in the Atlantic, from as few as seven to as many as 19. According to the CHC, 2001 was the third straight year that six tropical cyclones entered the CHC Response Zone, with four tropical storms passing through the same Newfoundland marine forecast area in one 30-day span. In 2002, the number of named storms in the Atlantic was above normal, at 12. However, the number of named storms reaching hurricane strength was only four (compared to the 50 year average of six).

Even if a hurricane does not touch Canadian land, it can still create severe weather for coastal areas and for any boats in the water.

continued on the next page

The average lightning stroke is six miles long and the temperature of lightning's return stroke can reach 50,000 degrees Fahrenheit. The surface of the sun is only 11,000 degrees Fahrenheit.

Photo courtesy of C. Clark and National Oceanic and Atmospheric Administration.

In a rare meteorological event of the century, three separate weather systems were on a collision course and met to create the "perfect storm" in the fall of 1991. A Great Lakes storm system moving east, a Canadian cold front moving south, and Hurricane Grace moving northeast were all headed for the North Atlantic.

Although there were warnings from Environment Canada and the National Oceanic and Atmospheric Administration, it seemed improbable that such a storm could develop. Further, because the storm developed so rapidly, people on land and fishermen weren't as prepared as they could have been. This led to search and rescue efforts in coastal towns and out in the sea.

With high winds and reduced visibility, SAR providers had a difficult task in the air and on the land. Because the conditions were hazardous, SAR providers could have decided to call off their searches, but they continued to search for survivors.

For more information on hurricanes and tropical storms, visit the Canadian Hurricane Centre's website at www.atl.ec.gc.ca/weather/hurricane ■

HURRICANE FACTS

- **The North Atlantic's hurricane season runs from the beginning of June until the end of November, peaking in mid-September. For Canada, however, the key months are August through October.**
- **For a hurricane to develop, it needs to be at least 500 km away from the equator. The Coriolis effect, the force of the Earth's rotation that deflects moving objects (including air currents) is too weak near the equator. This means the force would be too weak to promote circulation and help "spin-up" the hurricane.**
- **Hurricanes form over warm water of at least 26.5 C when the atmosphere is unstable and the winds from sea level up to nine kilometres are moving at the same speed and in the same direction.**
- **The development of hurricanes in the North Atlantic is highly diminished when an El Niño weather pattern occurs, because it can create strong winds high in the atmosphere that go in different directions at different speeds.**

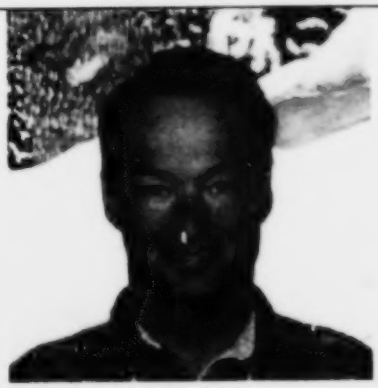
continued from page 3

According to Clair Israelson, Executive Director of the Canadian Avalanche Association, the response to ADAPT has been so positive that it is hard to keep up with the demand from the industry.

"People are saying they wish ADAPT had been available 15 to 20 years ago, because this training fundamentally changes the way we think about both personal and public safety," he said.

The Association feels this program will result in improved operational decisions by avalanche workers, and reduce the number of injuries and lives lost due to avalanches.

Avalanche workers and the recreational public are already aware of the potential for avalanches and most are carrying avalanche beacons, shovels and probes when backcountry skiing. Avalanche beacons emit a radio signal, and if a burial occurs, searchers can quickly locate people trapped under the snow. ■



Clair Israelson, Executive Director of the Canadian Avalanche Association, was an avalanche forecaster from 1972 to 1990. In that time, he formed an effective snow research and avalanche control program.

SNOWSMART
educates young winter enthusiasts

According to statistics from the Canadian Institutes for Health Information, snowmobiling is the leading cause of severe injuries related to winter sports. This accounts for 16 per cent of all severe sport injuries, and at least 26 per cent of those injured had consumed alcohol before being injured.

The statistics also state that downhill skiing accounts for six per cent of injuries, and snowboarding is responsible for five per cent of injuries.

SNOWSMART, a joint project of the Canadian Ski Patrol System, Parks Canada and the Canadian Avalanche Association, is a project of the Smartrisk Foundation that is geared toward active skiers, snowmobilers and snowboarders between the ages of 12 and 24.

Founded in 1992 by Dr. Robert Conn, Smartrisk is a national, non-profit organization dedicated to injury prevention that has created this educational program based on five principles of prevention – Buckle up; Drive sober; Look first; Get trained; and Wear the gear.

The three-year SNOWSMART program, completed in March 2002, increased youth awareness about the dangers and risks of winter activities.

It began because of the number of deaths reported during the height of the winter recreational season, especially of people under the age of 18.

A recent SNOWSMART study indicated that many youths who are winter enthusiasts are not adequately prepared for the risks, nor have any knowledge about detecting or avoiding avalanches and avoiding injury.

Further, SNOWSMART contradicts glamourized images in the media, which show extraordinary feats, but not the danger that can be faced by an inexperienced skier or snowboarder. The SNOWSMART program focuses on doing difficult manoeuvres safely by practicing risk management. ■

According to 2002 Canadian Ski and Snowboard industry stats, more than 4.7 million Canadians participate in one or more forms of skiing; downhill, cross country, snowboarding, or a combination of disciplines.

Cold Exposure Survival Model (CESM)

CESM, a project funded by the New Search and Rescue Initiatives Fund, is challenging some of the rules of marine search and rescue.

In the past, searchers would have had to estimate how long a person could last in the water after a plane crash or a boat sinking, and then determine how long to continue searching. With CESM, the survival time can be predicted more precisely. This allows searchers to make a better-informed decision on how long to continue the search, as for example, when CESM was used during the sinking of MV Vanessa in October 1997.

CESM is scientifically based on the physics of heat transfer and on the physiological response to cold. It provides a prediction of survival time based on when the body temperature reaches the threshold of lethal hypothermia. It is a 'living' development that continues to improve with new information. The Fund is supporting future upgrading that will lead to predictions of self-help limitations and probabilities of survival when details of the casualties are unknown. ■

Through partnerships among different private and public sector organizations, new search and rescue projects are approved each year to improve SAR across Canada.

Winter safety projects focus on prevention

Safety and ice rescue

Two New SAR Initiatives Fund projects were announced in January 2003.

The first, "Safety and Rescue on Ice," is a joint project with Parks Canada, the Canadian Red Cross, la Sûreté du Québec, la Fédération québécoise des clubs quads, la Fédération des clubs de motoneigistes and the National Search and Rescue Secretariat. The project includes the purchase of specialized equipment, such as isothermal clothing, cables and boats to improve ice rescues, which were demonstrated at a news conference in Chambly, Québec.

The three year program will enable training for approximately 900 safety officers, comprised of firefighters and volunteers who patrol waterfront areas with snowmobiles and all-terrain vehicles, in prevention and ice rescue.

The goal of the project is to spread awareness of the dangers of ice, as well as to minimize the risks associated with ice rescue.

Avalanche Safety

The second project is aimed at sensitizing people to the risks of avalanches in Québec. This project is supported by the Canadian Avalanche Association (CAA), la Sûreté du Québec, Parks Canada, le Centre d'avalanche de la Haute Gaspésie, Environment Canada, la Fédération québécoise de la montagne et de l'escalade, and the New SAR Initiatives Fund.

The Canadian Avalanche Association Training Schools offer many safety courses for industry professionals, including a new one called Avalanche Control Blasting.

Since the 1970s, there have been more than 80 avalanche victims in Quebec, with 33 dead and 50 injured. This avalanche awareness program will offer courses on prevention and search and rescue techniques for avalanche-prone areas in the region. ■

Danger Level and Color	Probability and Trigger	Recommended Action
	Natural avalanches very unlikely. Human triggered avalanches unlikely.	Travel is generally safe. Normal caution advised.
Moderate	Natural avalanches unlikely. Human triggered avalanches possible.	Use caution in steeper terrain on certain aspects.
Considerable	Natural avalanches possible. Human triggered avalanches probable.	Be increasingly cautious in steeper terrain.
	Natural and human triggered avalanches likely.	Travel in avalanche terrain is not recommended.
	Widespread natural or human triggered avalanches certain.	Travel in avalanche terrain should be avoided and confined to low angle terrain, well away from avalanche path runouts.

Source: Canadian Avalanche Association

Warnings and advisories are updated often. Visit www.avalanche.ca.

New weather stations in high-risk avalanche area

Since 1988, there have been 17 different projects supported by the New Search and Rescue Initiatives Fund aimed at educating people about the dangers of avalanches, designing safety materials, or researching avalanche patterns to better understand when and why they happen.

One such project is the installation of new weather stations in the high-risk avalanche area of Haute Gaspésie, Québec, thanks to the collaboration among Environment Canada, the Centre d'études nordiques of University Laval and the University of Québec in Rimouski.

The Centre d'avalanche de la Haute Gaspésie installed the three weather stations in the Chic-Chocs mountain range of the Gaspé Peninsula during the winter of 2002-2003. The plan is for the stations to become fully operational this summer. There will be two high/mid-elevation remote stations and one valley bottom manual station with computer hardware and software necessary to use, download, forward and manage weather data.

According to Dominic Boucher, coordinator of the Centre d'avalanche de la Haute Gaspésie, the new equipment contributes to the following safety measures and training:

- Providing avalanche professional training in Québec;
- Documenting and specifying local and regional climates at various elevations;
- Monitoring climate variation throughout the winter;
- Identifying weather conditions favourable to avalanche activity;
- Forecasting natural avalanche cycles and possible emergency situations;
- Preparing public avalanche bulletins; and
- Supporting emergency operations

Although avalanches may be unpredictable and catch us by surprise, prevention programs, training and awareness can help mitigate the risks. ■

Winter safety projects focus on prevention

Safety and ice rescue

Avalanche Safety

Danger Level and Color	Probability and Degree	Recommended Action
Low		
Moderate		
Considerable		
High		
Extreme		

Source: Canadian Avalanche Association

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The Centre d'avalanche de la Haute-Gaspésie installed the three weather stations in the Chic-Chocs mountain range of the Gaspé Peninsula during the winter of 2002-2003. The plan is for the stations to become fully operational this summer. There will be two mid-level weather stations and one valley bottom. Orbital stations will continue to study and identify necessary to use them to fill gaps in real-time weather data.

According to Dominic Boucher, coordinator of the Centre d'avalanche de la Haute-Gaspésie, the new equipment contributes to the following search operations and training:

- Providing avalanche professional [illegible] Québec
- Documenting and operations by [illegible] types of [illegible] at various [illegible] altitudes
- Monitoring changing [illegible] on the snow
- Identifying weather conditions favourable to avalanche activity
- Determining general avalanche [illegible] and possible emergency conditions
- Preparing public avalanche bulletins and
- Supporting emergency operations

Overall, avalanches can be unpredictable and can kill or injure anyone, so regular practices, training and awareness can help minimize the risks.

SAR

New tools for *Field Trip Safety*

The need to ensure that school outings are as safe as possible has been addressed by YouthSafe Outdoors (YSO), a three-year initiative that resulted in the development and distribution of research-based CD-ROM resources. The Alberta-based project, the largest and first of its kind in Canada, is directed at school boards, district administrators, principals, teachers/leaders, parents, and students. YSO has the potential to reduce recreational incidents throughout a lifetime of outdoor activities. It promotes a change in attitude and behaviour that can be spread among friends and family over many years.

The YSO resource is dedicated to the 11 students and one parent chaperone who have died on Alberta school field trips since the project was conceived in 1998. One of the parents, Ann Gray-Elton, who is also a teacher, served on the YSO Steering Committee.

John Rotheisler, President of Search and Rescue Alberta says, "YouthSafe Outdoors *Safety First! Guidelines* offers the first guidelines for schools in Alberta that are consistent with industry standard in outdoor pursuits activities. Adherence by schools should lead to good trips with minimal potential for incidents requiring callouts of our members or other rescuers such as Parks Canada wardens or RCMP."

The project was managed by Glenda Hanna, Ph.D. (Quest Research and Consulting, Inc.) and sponsored by the New Search and Rescue Initiatives Fund and Emergency Management Alberta, its educational partners (the College of Alberta School Superintendents, the Global, Environmental and Outdoor Education Council of the Alberta Teachers Association and the Alberta Home and School Councils' Association); and its community partners (Search and Rescue Alberta and the Mountain Equipment Co-op). Information on YouthSafe Outdoors is available from www.YouthSafeOutdoors.ca ■

Glenda Hanna

New Search and Rescue Initiatives Fund projects approved for 2003–04

The 2003-2004 New Search and Rescue Initiatives Fund projects range from programs in secondary schools on the risks of winter sports; expert training for police and volunteers to manage search incidents; and improved infra-red technology to help locate people in conditions such as blinding snow storms and dense woods.

The Honourable John McCallum, Lead Minister for Search and Rescue, approved the projects in March.

New proposals must be submitted by July 1, 2003 for funding starting in April 2004.

The Fund, with an annual budget of $8.1 million, supports search and rescue projects that enhance air, marine and ground search and rescue activities in Canada. Since 1988, it has funded over 700 projects at a cost of $120 million.

Projects are reviewed and ranked by a merit board composed of representatives from the National Search and Rescue Secretariat and six federal departments involved in search and rescue: Department of National Defence (Canadian Forces), Department of Fisheries and Oceans (Canadian Coast Guard), Environment Canada (Meteorological Service of Canada), Parks Canada, Solicitor General (Royal Canadian Mounted Police) and Transport Canada, as well as a representative from provincial and territorial search and rescue authorities.

For a complete list of projects, go to the Secretariat's website at www. nss.gc.ca or call 1-800-727-9414. ■

Interview with *The Honourable John McCallum,*

Lead Minister Responsible for Search and Rescue

In December 2002, Minister McCallum visited the National Search and Rescue Secretariat and spoke about search and rescue in Canada.

by Elizabeth Katz

Minister McCallum's first-hand experience with search and rescue came shortly after his appointment as Minister of National Defence in May 2002. It wasn't long before he gained an appreciation for the skills and courage that characterize search and rescue.

"My first exposure to search and rescue professionals were the SARTECHs who have to take huge risks and be able to endure great physical stresses under the worst of conditions. It can be a grueling job."

Last summer, Minister McCallum met with the 103 Search and Rescue Squadron in Gander, Newfoundland and the nearby community to discuss the recent crash of the Griffon helicopter in Labrador. Following the accident, the Minister acted on a suggestion from the flight engineer who had survived the crash to paint the squadron's helicopters bright yellow.

This initial exposure gave the Minister a first-hand look at the complexity and depth of knowledge needed for search and rescue.

"I know we sometimes work in stovepipes in Ottawa", he said. "But in search and rescue, people work together for the common good in a spirit of teamwork, and I suspect that's one of the reasons why there are fewer barriers. We have a coordinated system that works together – six federal departments and agencies, provincial and territorial authorities, police, volunteers and many others – to get the job done. We need to build on the high level of collaboration to continue the success we've had in saving lives."

Importance of communication

"We need to communicate effectively with the public. Public support and participation are important." The extensive media coverage of the new Cormorant helicopters, for example, is a result of an aggressive campaign to inform the public about search and rescue resources and expertise.

Communication is our best weapon to prevent search and rescue in the first place. "We are working hard to define more clearly the various roles and responsibilities within the national search and rescue program, and to improve reporting on search and rescue issues to the Canadian public."

"We need to work with our partners to get appropriate messages out to the public." The Minister emphasized the importance of prevention programs (such as National Safe Boating Week, Atlantic Canada's Severe Winter Weather Awareness program and the RCMP 'Hug-a-Tree' program for children) as critical elements of the collective effort to keep Canadians safe.

Backbone of the national system

The Minister addressed a number of challenges for search and rescue, notably the need to recruit new people. "This is a huge challenge for our organizations, especially the volunteers. Finding people who are physically active, versatile and willing to devote considerable time to training is difficult. Volunteers – thousands of individuals in ground teams, the Canadian Coast Guard Auxiliary and the Civil Air Search and Rescue Association across the country – make the system work as well as it does."

Volunteers are responsible for major initiatives that now include public safety messages for outdoor enthusiasts, courtesy marine vessel inspections, promotion of aviation safety and more. "These are wonderful programs," he said. "And we need to support them and learn from them." At the same time, volunteers are challenged by the need to raise funds for equipment, training and administration. "These efforts can take their toll on individuals and families."

Minister of National Defence, The Honourable John McCallum.

Innovation in search and rescue

Minister McCallum noted that the New Search and Rescue Initiatives Fund is an important part of the federal government's overall innovation strategy. "We're promoting a more innovative country and a more innovative economy and search and rescue is no exception." Since 1988 the Fund has supported over 700 projects in all areas of search and rescue – SAR data and information collection, prevention, research and development, response and volunteers.

Canada has been in the forefront of innovation since the early development of the COSPAS-SARSAT search and rescue satellite system in 1988. Canada was a founding member of this system that links distress signals to the Canadian Forces' Mission Control Centre in Trenton, Ontario from where rescue missions are deployed. "The COSPAS-SARSAT system continues to play a central role in Canada's seamless global safety net and Canadians can be proud of this contribution."

There's no question, the Minister concluded, that Canada deserves its excellent reputation in search and rescue. ■

Const. Bob Parry and Auxiliary Const. Lisa Burns. The Auxiliary OPP uniform differs from the one worn by regular OPP members by the light blue shirt Auxiliary members wear, and all outerwear has the Auxiliary insignia. Photo courtesy of Insp. Wagner.

Const. Bob Parry and Auxiliary Const. Robert Thomas. Photo courtesy of Insp. Wagner.

Getting to know the OPP Auxiliary

With an area of 892,000 sq. kilometres, diverse communities and vast terrain, Ontario has many policing needs, from crowd control to search and rescue. The Ontario Provincial Police (OPP) and its Auxiliary are trained and equipped to function in many capacities.

"The OPP Auxiliary program is an outstanding example of a well-organized, well-managed and effective volunteer community policing service that brings together people from many walks of life," says OPP Commissioner Gwen Boniface. "It's remarkable that people volunteer in our OPP Auxiliary for 20, 25, 30 and even 40 years."

The OPP Auxiliary, formed in 1960, became self-directed in 1991 as a result of recommendations from a 1988 audit. Auxiliary Chief Superintendent Terry Harkins was then appointed Executive Director and Provincial Commander of the OPP Auxiliary.

One of the activities of the OPP Auxiliary's 850 members is to provide a support role for search and rescue incidents managed by regular OPP officers who are trained in search and rescue. They also assist regular officers on patrol, accompany regular members on marine and snow vehicle patrol, provide victim assistance, assist RIDE program initiatives, and provide traffic control and ground security at major events.

> *"The Auxiliary includes the military, lawyers, pilots, farmers, paramedics, bus drivers, nurses, electricians, carpenters, mechanics, homemakers and private business owners."*

Being an OPP Auxiliary member takes dedication and a commitment of time, with a minimum of 10 hours per month on patrol, six hours per month of in-service training, and a 60-hour orientation program. Members are trained in law, personal safety, protocol, manual traffic control, emergency equipment, arrest procedures and firearms.

And since 1997, Auxiliary recruits have been required to pass the General Aptitude Test Battery (GATB) and psychological testing.

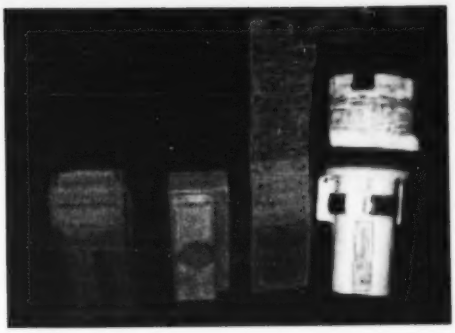
"The Auxiliary includes the military, lawyers, pilots, farmers, paramedics, bus drivers, nurses, electricians, carpenters, mechanics, homemakers and private business owners," says Inspector Wagner.

Further, he says the requirements for enrolment include being a Canadian citizen or permanent resident of Canada at least 18 years of age and having an Ontario secondary school diploma or equivalent, standard First Aid training, a valid driver's licence with a good driving record, and being physically able to perform the duties.

"It is truly an honour and a privilege to command such a dedicated group of individuals who by devotion to service make Ontario a better and safer place to live. Being an auxiliary member is a total family commitment to volunteerism in the OPP," says Auxiliary Chief Superintendent Harkins. ■

Beacon Breakthrough

Change to 406 MHz frequency not an easy transition



After the COSPAS-SARSAT system was developed, the first 15 months were to determine the system's effectiveness. Only nine days after testing began, on September 9, 1982, the system picked up the signal of a downed aircraft.

As of February 1, 2009, emergency beacons will no longer be monitored on the 121.5 MHz frequency.

The Council of COSPAS-SARSAT, the international organization that coordinates the satellite detection of distress signals, announced in October 2000 that it would phase out the use of the lower frequency. After February 1, 2009, only signals transmitted by emergency locator transmitters (ELTs), emergency position indicating radio beacons (EPIRBs) and personal locator beacons (PLBs) operating at the 406 MHz frequency will be tracked by satellite.

The decision was made based on recommendations from the International Maritime Organization and the International Civil Aviation Organization. These two United Nations agencies are responsible for regulating the safety of ships at sea and aircraft in international transits and for international standards and plans for maritime and aeronautical search and rescue.

Transport Canada and EMS Technologies, with financial support from the New Search and Rescue Initiatives Fund, have invested $690,700 in a three-phase project to develop a low-cost 406 MHz ELT. The ELT is currently being tested to COSPAS-SARSAT specifications in an approved laboratory, and the goal is to make it available at about the same price as the current 121.5 MHz beacons.

While there is an increase in price, there is also an increase in accuracy. The 406 MHz beacons provide more accurate and reliable alert data to SAR agencies.

The 121.5 MHz beacon has an accuracy of approximately 10 nm, whereas the new beacon has an accuracy of 2 to 4 nm because of its very high signal stability.

This means that searchers will be able to pinpoint a distress signal with better accuracy because the beacon's signal is stronger and more stable, compared to the 121.5 MHz signal.

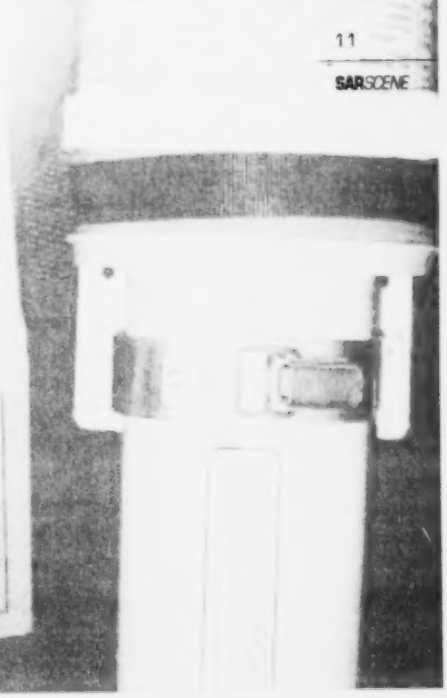
Not only are the 406 MHz beacons more accurate, but they have a feature that allows the receiving agency to look up the beacon registration and find out who owns it. Each beacon's signal includes a digital identification number so technicians will be able to know who is in distress, and other relevant data, such as, position data, the type of user – whether it be a maritime, radio, serial, aviation or national user – radio call sign and emergency code. This allows technicians to take available details and search a database for more information before launching a search, if necessary.

According to Captain Brian Hoogkamp of the Canadian Mission Control Centre, since 1982, approximately 88 per cent of 121.5 MHz emergency beacon alerts have been false. Use of the new 406 MHz beacons will also help reduce the number of false alerts received by rescue coordination centres, as well as the number of unnecessary search and rescue actions. With the new technology, the number of times the beacon would go off for non-emergency reasons should be diminished.

Though data is not yet compiled for 2002, Capt. Hoogkamp says 406 MHz statistics indicate "a possible better knowledge of 406 handling procedures and fewer interferers being broadcast on the frequency over a period of time."

According to the COSPAS-SARSAT Council, there are currently more than 220,000 of the new 406 MHz beacons operating world-wide.

Since 1982, more than 11,000 people have been rescued world-wide through the COSPAS-SARSAT System. ■



Cell phones: the risks and benefits for SAR

The latest advertisements for cell phones promote photography and e-mail.

What they leave out is the potential for your cell phone to help save your life. Cell phones are great to call a tow truck for breakdowns or even to call and say you're late for a meeting. But what if you're lost or trapped in the wilderness?

A Manitoba woman was recently stranded in the country after being lost on the way to visit friends. Michelle Koshelanyk survived 16 hours in rural Manitoba thanks to her full tank of gas, cell phone and its charger.

More than 50 volunteers and police officers began searching for Koshelanyk after she used her cell phone to call for help before its battery died. But she was unable to give an accurate idea of her location, and so the search began.

Koshelanyk kept warm by running her engine, and after charging her cell phone, made another call to the RCMP.

Unsure of where she was and surrounded by no visible landmarks or roads in sight, Koshelanyk tried to describe the turns she had taken to arrive at her location. Because she was so disoriented, her directions led to a search that covered several hundred square kilometres.

After searching for hours, the RCMP contacted the Rogers-AT&T head office to begin tracing the calls Koshelanyk placed to police. Once her calls were traced, searchers were able to narrow the search radius to 10 km.

After 16 hours of being stranded in the barren wilderness, Koshelanyk was spotted by an RCMP plane. She had been told to flash her car lights to help searchers find her faster. She was also told to build a small fire beside her car so she would be spotted more readily from the air.

Koshelanyk is grateful to all the citizens and police officers who searched for her, and says she was lucky to have had her cell phone.

"My family and I want to express our heartfelt gratitude to all of those people who helped rescue me. They saved my life."

Cell phone ban

The use of hand-held cell phones while driving was banned in Newfoundland and Labrador in December 2002. The penalty ranges from $45 to $180 plus the loss of four demerit points.

On the other hand, nurses in rural and remote areas of Manitoba will be given cell phones to replace pagers, as a result of recommendations from a nursing task force in 2000.

The pitfalls

On the other hand, having a cell phone does not guarantee you will be rescued. Batteries run out, reception isn't good, and in low-lying areas or rugged terrain, the phone cannot pick up a signal.

A cell phone is not a replacement for a Personal Locator Beacon (PLB). Using a cell phone to call for help is more complicated than setting off a PLB to send a distress signal. A person who is injured may not be able to use a cell phone, wasting precious minutes when a search team could already be alerted to a person in distress.

A beacon can direct searchers to where their help is needed, when a cell phone user can't describe the location. If a person is disoriented and not sure of where he or she is, searchers can be misdirected. Tracking a cell phone call to identify the location can take some time. With a beacon, the signal emitted helps pinpoint a more exact location quickly.

The National Search and Rescue Secretariat will be looking at the policy and operational issues associated with the of cell phones for search and rescue. For example, the routing of emergency calls directly to SAR responders instead of fire, police or ambulance; an incapability for some SAR responders to talk directly to cell phone users; procedures for accessing the geographical location of a cell phone signal; and, the current approach to education and public information regarding the limitations of cell phones as emergency communications devices. ■

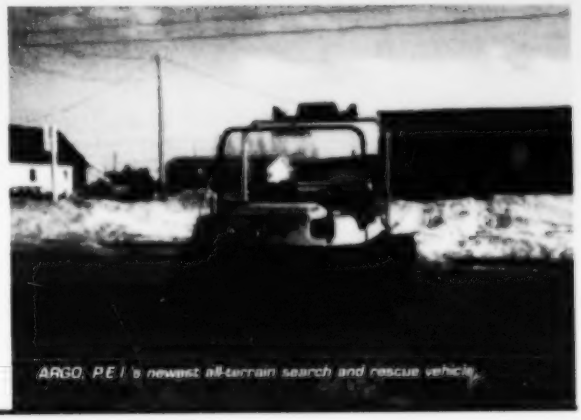
ARGO conquest vehicle – PEI

Emergency agencies in Prince County, Prince Edward Island are now ready for off-road rescues with their new 8X8 ARGO conquest tracked vehicle.

Stationed at the police department in Borden-Carleton, the vehicle was funded by Federal and provincial partners, as well as Master Packaging Ltd.

The ARGO is equipped with a rescue sled and a complete vehicle radio system, which allows the crew to talk to other emergency agencies across the province.

Ground search and rescue teams, fire departments and members of the Canadian Ski Patrol have been trained to operate the vehicle. ■



ARGO, P.E.I.'s newest all-terrain search and rescue vehicle.

Halifax region launches mobile command vehicle

This past January, the Halifax Regional Search and Rescue team launched a mobile command centre to manage ground search and rescue incidents.

Costing $350,000, this command centre is a fully self-contained incident command centre, with 225 square feet of space for planning in all weather, with integrated multi-level communications capability.

Response times will be improved because equipment is already stored in the vehicle and searchers will have quicker access to a variety of rescue and site management tools and supplies. As well, set-up time on location will be reduced because of improvements to radio tower set-up and improvements in basic readiness of the new command centre. All in all, the teams will be able to get into the woods faster.

Tony Rodgers, spokesperson for the volunteer search and rescue team, as well as past Director for the group based in Lakeview, N.S., says "all of the accolades for the development and planning for this mobile command vehicle go to our team members." ■

The Office of the Fire Marshall in Hay River, Northwest Territories awarded "I Survived!" certificates to students who completed the Youth SAR Camp last June. The camp, which included lessons in water safety, hypothermia and shelters, was part of an on-going SAR prevention program, the Risk Watch Program, funded by the Government of the Northwest Territories.

Doppler weather advances

The Georgian Bay and Parry Sound regions of Ontario now have more accurate weather data. On November 13, 2002, Environment Canada announced the opening of the Georgian Bay Doppler weather radar and the new automatic weather station located in Parry Sound.

The Honourable Andy Mitchell, MP for Parry Sound-Muskoka said " this advanced weather radar will provide meteorologists with valuable data to predict severe weather more quickly and precisely."

This is the fifth Doppler radar located in Ontario, part of a country-wide network of radars being installed by Environment Canada.

(See story on page 1) ■

Want More Information?

- A full report of the simulated Cape Dorset Arctic disaster is now available. Please contact S/Sgt Bryan Finney at bfinney@nss.gc.ca for more information.
- Audio tapes from SAR*SCENE* 2002 conference, held in Halifax are available. If you would like a tape of any presentations, please contact Bob Black at contape@cyberus.ca, or see the list of presentations at **www.nss.gc.ca/site/SARScene/workshop/2002/Presentations_e.htm**. There is a $10 charge per tape.
- VHS tapes and DVDs of SAR*SCENE* 2002 are available for $22.45 per VHS tape and $37.29 per DVD. Prices include Xpress Post shipping and handling, but do not include applicable taxes. VHS copies of previous years are also available for $22.45. Contact Sandy Durocher at sandydur@sympatico.ca or by phone at (613) 836-1912.

Recruiting begins for new Ontario volunteer program

Six municipalities across Ontario will be pilot sites for the Ontario Ministry of Public Safety and Security's new Community Emergency Response Volunteers (CERV) Ontario program.

The six municipalities are: Brampton, Carleton Place, Hamilton, Oliver Paipoonge, Prescott and Timmins.

CERV Ontario is trying to gather a broader base of experience, knowledge and skills by recruiting retired emergency responders, such as former police officers, firefighters and paramedics for leadership roles and liaison roles with current emergency responders.

The volunteers will be trained in a variety of general emergency and disaster management skills, including: basic medical and lifesaving skills; the psychology of disaster; decision-making and teamwork; self-help emergency functions; and light search and rescue operations.

Modelled after the successful Community Emergency Response Teams program in the United States, CERV Ontario hopes to continually improve emergency management practices in the province.

The program will be available by spring 2003. Anyone interested in joining an existing team or starting a team, should contact his or her local municipality. ■

5th Annual Canadian Safe Boating Awards

The Newfoundland and Labrador Search and Rescue Association (NLSARA) was awarded "Top volunteer dedicated to safe boating" for 2002.

Nominated by the Canadian Coast Guard (CCG) for outstanding achievement in promoting safe boating across Newfoundland and Labrador, NLSARA has participated in over 200 events since March 2002. NLSARA consists of 27 teams with more than 900 volunteers across the province who have completed over 10,000 hours in searches.

Brian Avery, Newfoundland Superintendent for the Office of Boating Safety, CCG, says "the volunteers have been very active in promoting safe boating in many communities across Newfoundland and Labrador." ■

Dementia Walk-A-Way kit now available in French

The Dementia Walk-A-Way information kit, a New SAR Initiatives Fund project developed in Nova Scotia, has now been translated into French and adapted for use in Québec and other jurisdictions where French is spoken.

To obtain a copy, contact Charlie Strickland at searchr@pchg.net. ■

Canadian Tire boosts boating safety

By 2009, all operators of pleasure craft fitted with a motor will be required by law to carry proof of competency under the Competency of Operators of Pleasure Craft Regulations. The program received a boost this spring when Canadian Tire and Ted Rankine, host and producer of Powerboat Television, began marketing a study course accredited by the Canadian Coast Guard. The book and CD-ROM are being sold in Canadian Tire stores across the country where about 800 proctors from the Canadian Red Cross provide in-store testing for boat owners. Mr. Rankine, former President of the Canadian Safe Boating Council, began his career in boating safety with support from the New Search and Rescue Initiatives Fund in 1989, broadcasting boating safety information in his recreational boating show, Powerboat Television, seen weekly across Canada and in the United States. The show carries boating safety messages in each episode. ■

Inshore Rescue Boat 30th Anniversary Reunion – Pacific Region

Present and former students, crewpersons, coordinators and support staff of the Inshore Rescue Boat (IRB)/ Responsible Recreational Boating (RRB) program are celebrating the 30th anniversary of the program at a reunion in Victoria on May 10, 2003.

The IRB Program was implemented to augment Coast Guard personnel and resources during the summer when there is an increase in search and rescue activity. It provides students with summer employment and an opportunity for a marine career.

For information on the reunion or if you know anyone who has been involved with the IRB/RRB Program, contact Carol Fitzsimmons at fitzsimmonsc@pac.dfo-mpo.gc.ca or telephone (250) 363-5360. ■

Photo courtesy of Inshore Rescue Boat Program

Upcoming Events

Alberta's SAR Day

Alberta's third annual SAR Day, May 4th, 2003, is an opportunity to promote timely prevention messages and to raise awareness of the services delivered to the public on the behalf of the many paid and volunteer SAR providers in the province. *www.saralberta.org*.

Emergency Preparedness Week

Emergency Preparedness Week, May 4 to 10, 2003, is an annual event designed to build awareness of public risks and how to plan and prepare for any type of emergency. During the week, a variety of events and activities are organized in the communities of every province and territory of Canada. *www.emergencypreparednessweek.ca/*

National Police Week

Held during the second full week of May, this year's National Police week is May 11-17, 2003. It celebrates the work of police officers across Canada. *www.rcmp-grc.gc.ca/html/police-weekint.htm*

2003 Washington State SAR Conference

This annual event offers many training opportunities for all individuals in Search and Rescue in order for them to grow in their areas of expertise at little cost.

The conference will be May 16-18, 2003, at Camp Seven Mile in Spokane, Washington. *www.spokanesar.org/sarconference.html*

National Safe Boating Week

National Safe Boating Week, a joint Canada-U.S. event, will be held from May 17-23, 2003. Working together are the Canadian Safe Boating Council, the National Safe Boating Council, the Canadian Coast Guard, the United States Coast Guard Office of Boating Safety, and the National Association of Boating Law Administrators. *www.safeboatingcampaign.com/*

SAR 2003

The 31st National Association for Search and Rescue conference, SAR 2003, will be held May 28-31, 2003 at John Ascuaga's Nugget Hotel, Reno, Nevada. *www.nasar.org*

Canadian Forces Day

On June 1, 2003, Canadian Forces members will be honoured for their contributions to Canada and abroad. *www.forces.ca*

Parks Day

Established in 1989, Parks Day focuses attention on the issue of natural heritage conservation in Canada and on the importance of national, provincial and territorial parks. This year, Parks Day is July 19, 2003. *www.parksday.ca*

CSBC Symposium

The Canadian Safe Boating Council's (CSBC) annual symposium will take place Sept. 25-28, 2003, in Montréal, QC. *www.resolutionbost.com/CSBC/Home.htm*

ISAR 2003

The International Search and Rescue Competition is an annual event between Coast Guard Auxiliary teams from Canada and the United States to test the volunteers' ability to plan, communicate and execute a search and rescue mission. The next competition will take place in St. John's, Newfoundland, September 26-27, 2003. *www.ccga-gcac.com/isar2003/index_e.asp*

SAR*SCENE* 2003

SAR*SCENE* 2003 will take place from October 15-18, in Kingston, Ontario. The conference is organized by the National Search and Rescue Secretariat, and this year's local host is the Ontario Provincial Police. Don't miss the games, workshops, trade show and SAR demonstrations. For more information, visit *www.nss.gc.ca* or call 1-800-727-9414.

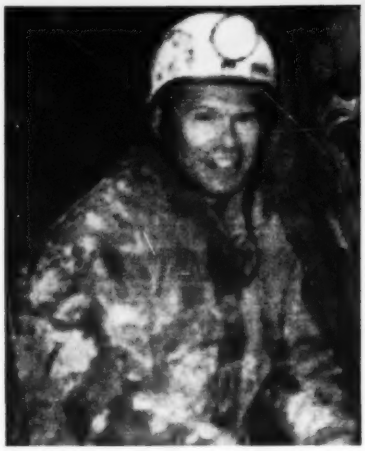
Severe Winter Weather Awareness Week

The third annual Environment Canada Severe Winter Weather Awareness Week kicks off in early December 2003. The purpose is to raise awareness of the importance of being prepared for winter weather, not only by dressing properly, but also by having emergency kits in cars and homes.

Visit Environment Canada's website for more information at *www.ec.gc.ca*

To have your event listed in SARSCENE *magazine or on the National Search and Rescue Secretariat web site, please call 1-800-727-9414 or e-mail tbouchard@nss.gc.ca*

Safety precautions
minimize cave rescue incidents



Phil Whitfield, Provincial Coordinator of BCCR

Caves take thousands of years to develop, but it takes only minutes to become disabled or lost in one. They are one of the most beautiful natural formations in the world, but they also contain significant hazards and can become a dank, dark confusing mass of passages and dead ends.

Being unprepared for a caving adventure can lead to problems, and even the most experienced cavers have difficulties. Hypothermia is a major problem ill-equipped cavers experience, as the temperature in many caves hovers around 1C.

Proper clothing, equipment and supplies can prevent misfortune. A caver's equipment should include a suitable helmet with chinstrap, 3 reliable light sources, adequate clothing and boots, a first aid kit, whistle, penknife, batteries, self-rescue equipment and extra clothing.

For safety, caving groups should be no fewer than three people, and for the conservation of the cave and for good communications, no larger than eight, says Phil Whitfield, Provincial Coordinator of B.C. Cave Rescue. The best way to experience caving is with one of the country's established caving organizations, most of which are accessible through the website www.cancaver.ca

BCCR is capable of responding to cave emergencies anywhere in Western Canada and the Northwestern United States. The primary cave rescue equipment cache is located at Campbell River (North of Comox), with secondary caches at Kamloops and Prince George.

The British Columbia Response

British Columbia has established a rescue coordination group, called the British Columbia Cave Rescue (BCCR) organization. It is recognized by the Provincial Emergency Program (PEP) as the lead agency for cave rescue in B.C.

Formed in 1984, B.C. Cave Rescue is a volunteer operation supported by various memorial funds, training seminar and registration fees, as well as private donations. But B.C. Cave Rescue volunteers don't work alone. The group operates under a 1992 memorandum of understanding with PEP, the RCMP and the B.C. Ambulance Service.

"The most common accidents in caves are not usually caused by cave-ins themselves, but by a caver falling, being hit by a falling object (usually single rocks) or problems with equipment," says Mr. Whitfield.

Cave-ins, or large volumes of rockfall, do occur, but very rarely. When they do happen, they seldom cut off retreat from a cave completely.

Mr. Whitfield says rescues are usually the result of "twisting, dislocating or impacting body parts in the irregular passageways, or from rocks dislodged by another party member."

BCCR is capable of responding to caving emergencies anywhere in Western Canada and the Northwestern United States and trains cavers and SAR members for two types of rescue situations.

The first situation is self-rescue, where the caving party rescues an injured member of their own group.

"This capacity is important because it may take considerable time to summon help and for suitably prepared outside help to arrive at the accident scene," says Mr. Whitfield.

The second situation is a formal SAR response, or the "cavalry" riding to the rescue, as BCCR likes to call it.

The SAR response is initiated when the accident has been serious enough that only outside assistance will be sufficient in getting the injured person out.

Mr. Whitfield recalls the 1992 accident in Arctomys Cave, in B.C. that involved an extensive use of resources.

At 522 m deep, the Arctomys Cave is Canada's deepest cave and the 1992 rescue required 110 individuals, from cave rescuers to surface rescuers. There were approximately 30 cave rescue personnel on-site, as well as surface SAR support, the participation of the RCMP, Parks Canada, B.C. Parks and others.

Although the majority of their training focuses on extrication, BCCR also trains for searches even though they have had a limited number of cases involving cave searches.

The members of BCCR are well trained and have week long training seminars in cave rescue organization and techniques every July in even-ending years, like 2000, 2002, 2004 and so on. As well, they have annual regional small party self-rescue weekend workshops. ■